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Enabling mechanisms for Cloud-based network virtualization in IoT

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Abstract

© 2015 IEEE.As part of a wider effort in integrating Internet of things (IoT) with the Cloud under the guise of infrastructure to be provided as-a-Service, network virtualization plays an essential role, both as an enabler of Infrastructure-as-a-Service scenarios and as a basic building block of the solution for the IoT-focused Cloud provider. Virtualization of the networking facilities for Cloud-managed IoT resources needs mechanisms to deal with the inherent complexity. This work outlines an implementation-agnostic approach to such a problem, reflected in our evolving Stack4Things architecture, derived from OpenStack, and implemented starting from such codebase, by leveraging also a choice of modern tooling and protocols. A specific use case and the discussion that follows are provided to frame the benefits of this strategy.

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Keywords

Cloud, IoT, network virtualization, OpenStack, WebSocket